

comprises a Group II-VI semiconductor, a Group III-V semiconductor, a Group IV semiconductor, an alloy of ZnS, ZnSe, ZnTe, CdS, CdSe, CdTe, HgS, HgSe, HgTe, MgTe, GaN, GaP, GaAs, GaSb, InN, InP, InAs, InSb, AlAs, AlP, AlSb, AlS, Ge, Si, or Pb of a Group II-VI semiconductor and a Group III-V semiconductor, an alloy of a Group II-VI semiconductor and a Group IV semiconductor, an alloy of a Group III-V semiconductor and a Group IV semiconductor, an alloy of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor, a mixture of a Group II-VI semiconductor and a Group III-V semiconductor, a mixture of a Group II-VI semiconductor and a Group IV semiconductor, a mixture of a Group III-V semiconductor and a Group IV semiconductor, or a mixture of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor.

38. (Original) The library of claim 37, wherein each nanocrystal comprises:  
a core comprising a first semiconductor material; and  
a shell layer overcoating the core, the shell comprising a second semiconductor material having a band gap greater than that of the core,  
wherein the first semiconductor material and the second semiconductor material are the same or different.

39. (Original) The library of claim 37, wherein the characteristic spectral emission is a wavelength of emitted light, an intensity of emitted light, or both a wavelength and an intensity of emitted light.

#### REMARKS

Claims 1-3, 12-13, 26, 27, 31-33, and 37-39 are pending. Claims 1, 26, 37 and 38 have been amended. Support for the amendment can be found throughout the specification, for example, page 9, line 29 to page 10, line 3 of the specification.

Applicants have amended the claims to address the priority and new matter rejections maintained in the Advisory Action. While Applicants continue to believe the prior amendments were duly supported by the priority documents and disclosure, in the interest of advancing prosecution the claims 1, 26, 37 and 38 have been amended in an effort to overcome these

rejections.

Applicants acknowledge withdrawal of the rejection of claims 1-3, 12-13, 26-27, 31-33, and 37-39 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,990,479 to Weiss et al. ("Weiss") (see page 5 of the Office Action).

Frankel

The Examiner continues to reject claims 1, 3, 12-13, 26-27, 32, 33, 37 and 39 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,096,496 to Frankel ("Frankel") (see page 6 of the Office Action). The Examiner argues Frankel teaches "tagged beads . . . wherein the tag can be semiconductor nanocrystals including Group III-V particularly GaAs" (see pages 6-7 of the Office Action). Applicants respectfully disagree. Claim 1, 26 and 37 are independent.

Claim 1 relates to a library of compounds, wherein each compound in the library is bound to an individual support, each support having associated therewith more than one population of semiconductor nanocrystals, each population having a distinct characteristic spectral emission, wherein each nanocrystal includes a Group II-VI semiconductor, a Group III-V semiconductor, a Group IV semiconductor, an alloy of a Group II-VI semiconductor and a Group III-V semiconductor, an alloy of a Group II-VI semiconductor and a Group IV semiconductor, an alloy of a Group III-V semiconductor and a Group IV semiconductor, an alloy of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor, a mixture of a Group II-VI semiconductor and a Group III-V semiconductor, a mixture of a Group II-VI semiconductor and a Group IV semiconductor, a mixture of a Group III-V semiconductor and a Group IV semiconductor, or a mixture of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor.

Claim 26 relates to a chemical library including a plurality of member chemicals, wherein each member chemical is bound to a support, each support having associated therewith more than one population of semiconductor nanocrystals, each population having a distinct characteristic spectral emission, wherein each nanocrystal includes a Group II-VI semiconductor, a Group III-V semiconductor, a Group IV semiconductor, an alloy of a Group II-VI semiconductor and a Group III-V semiconductor, an alloy of a Group II-VI semiconductor and a Group IV semiconductor, an alloy of a Group III-V semiconductor and a Group IV semiconductor, or a mixture of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor.

semiconductor, an alloy of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor, a mixture of a Group II-VI semiconductor and a Group III-V semiconductor, a mixture of a Group II-VI semiconductor and a Group IV semiconductor, a mixture of a Group III-V semiconductor and a Group IV semiconductor, or a mixture of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor.

Claim 37 relates to a library of polypeptides including a plurality of polypeptides, wherein each polypeptide in the library is bound to an individual support, each support having associated therewith more than one population of semiconductor nanocrystals, each population having a distinct characteristic spectral emission and wherein each nanocrystal includes a Group II-VI semiconductor, a Group III-V semiconductor, a Group IV semiconductor, an alloy of a Group II-VI semiconductor and a Group III-V semiconductor, an alloy of a Group II-VI semiconductor and a Group IV semiconductor, an alloy of a Group III-V semiconductor and a Group IV semiconductor, an alloy of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor, a mixture of a Group II-VI semiconductor and a Group III-V semiconductor, a mixture of a Group II-VI semiconductor and a Group IV semiconductor, a mixture of a Group III-V semiconductor and a Group IV semiconductor, or a mixture of a Group II-VI semiconductor, a Group III-V semiconductor, and a Group IV semiconductor.

Frankel describes beads transmitting a distinct electromagnetic code. Frankel, however, does not disclose that each support is associated with more than one population of semiconductor nanocrystals, each population having a distinct characteristic spectral emission. The references to Frankel at page 4 of the Advisory Action do not support such a teaching.

Thus, Frankel does not disclose all elements of claims 1, 26 and 37. Accordingly, claims 1, 26 and 37, and the claims which depend therefrom are not anticipated by Frankel. Applicants respectfully request reconsideration and withdrawal of this rejection.

### CONCLUSION

In light of the foregoing amendments and remarks, Applicants respectfully submit that all requirements for patentability are met and ask that all claims be allowed. Please apply any charges or credits to deposit account 19-4293.

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Serial No. : 10/632,922  
Filed : August 4, 2003  
Page : 8 of 8

Attorney's Docket No.: 14952.0274 CID1/ MIT Case 8096

Respectfully submitted,

Date: 1-21-07



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